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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,096	10/31/2003	Bruno Devos	DEVO3004/JEK	9002
23364	7590	06/22/2006	EXAMINER	
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			NGUYEN, JIMMY H	
			ART UNIT	PAPER NUMBER
			2629	

DATE MAILED: 06/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/697,096	DEVOS ET AL.	
	Examiner	Art Unit	
	Jimmy H. Nguyen	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 31 October 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-21 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

1. This Office Action is made in response to applicant's papers filed on 10/31/2003. Claims 1-21 are currently pending in the application. An action follows below:

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. In the instant case, the claimed invention directs to a control unit (116) for use in a configurable large-area display system (100) instead of a display pixel module (220). Further, the title of the invention should be brief but technically accurate and descriptive, preferably from **two to seven words** may not contain more than 500 characters. See 37 CFR 1.72(a) and MPEP § 606. Examiner suggests one of the following titles: "A CONFIGURABLE LARGE DISPLAY SYSTEM", "A CONTROL UNIT FOR USE IN A CONFIGURABLE LARGE DISPLAY SYSTEM", or "A SUB-DISPLAY FOR USE IN A CONFIGURABLE LARGE DISPLAY SYSTEM".

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features, "a standalone manner" and "a transparent structure" of claim 13 and "some intermediate pixels (222), which are spaced apart less further then desired, are ignored for use" of claim 21, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet,

Art Unit: 2629

even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claim 1 is objected to because of the following informalities: "(122)" in line 10 should be changed to --(222)--, so as to make the feature consistent with the drawing (see Fig. 2) or deleted. Appropriate correction is required.
5. Claim 2 is objected to because of the following informalities: --said-- should be inserted immediately before "central" in line 2 because there is sufficient antecedent basis for this feature in the claim. Appropriate correction is required.
6. Claim 13 is objected to because of the following informalities: "structures" in line 3 should be changed to --structure-- because of the grammatical error. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 2629

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 13, 20, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 13, it is not clear what the applicant means "the modules (220) of the display are arranged in a standalone manner so that the display (114) apparently has a transparent structure", i.e., what a standalone manner and a transparent structure mean.

As to claims 20 and 21, claim 20 recites the limitations, "the pixel elements" in 5, "the EEPROM(224) in line 6, and "the pixel clusters (218)" in line 9. There is insufficient antecedent basis for these limitations in the claim. Additionally to claim 21, it is not clear what the applicant means "depending on the desired spacing, some intermediate pixels (222), which are spaced apart less further than desired, are ignored for use".

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 6, 16, 20, and 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As per claims above, these claims contain the feature, "the EEPROM (224) contains production data factory light output measurements, as well as color coordinates for each pixel (222) within modules (220)", which was not described in the specification in such a way as to

enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The disclosure, when filed, specifically Fig. 2 and page 19, lines 6-17, expressly discloses **an EEPROM (224)** included in a control unit (116), for storing the hardware configuration and the spacing of the picture elements. Further, the disclosure, specifically page 13, lines 21-27, expressly discloses **another EEPROM** included in each module 220, for storing production data factory light output measurements, as well as color coordinates for each pixel (222) within modules (220). Accordingly, the specification and the drawing do not teach the above underlined feature in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Additionally to claims 20 and 21, claim 20 contains a feature, “the picture elements (222)”, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The disclosure, when filed, specifically page 22, expressly discloses the picture elements corresponding to the modules 220; however, claim 20 recites the picture elements (222) corresponding to the pixels 222 (see Fig. 2). Accordingly, the specification and the drawing do not teach the above underlined feature in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

11. It is noted applicants that due to the above 112 rejections, the following art rejections to claims being rejected under 35 USC 112, first and second paragraphs above, are based as best understood by the examiner.

Art Unit: 2629

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1, 2, 11-14, 18, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Maskeny (US 5,990,802).

As to claims 1, 11, 14 and 19, the claimed invention reads on the Maskeny reference as follows: Maskeny discloses a configurable large-area display system (a system 42, see Fig. 7, col. 2, line 37) comprising a display (a display including modules 12 as shown in Fig. 1) including a plurality of sub-displays or control units (12) (see Fig. 1), each containing an array of LED pixels (LEDs 16, Fig. 1, col. 4, line 14); a central controller hardware and software block (a computer (see Fig. 6) containing software to control the display system (42) and to generate control data and video signals to be displayed on the display (see col. 8, lines 32-47); and a digitizer (a microcontroller 20, see Figs. 1 and 6) converting said control data and video signals to a digital signal compatible with the display (see col. 5, lines 16-38); wherein the digitized control data and video signals are passed from one sub-display (12) to the next (see Fig. 4, col. 5, lines 64-66) and each sub-display or control unit (12) is capable of controlling the individual pixels (122) of said control unit (12) as a function of position within the display and of the received control data and video signals (see col. 2, line 56 to col. 3, line 5, and col. 6, lines 59-64). Maskeny further teaches each sub-display or control unit (12) comprising 4 pixel clusters (Fig. 1 shows each pixel cluster comprising 4 groups of LEDs and associating with a latch driver IC 14) and each cluster including 4 pixel modules which are sequentially interconnected with

each other and each containing an array of 4 LEDs (16). Accordingly, all the limitations of these claims are read in the Maskeny reference.

As to claim 2, Maskeny discloses the central controller hardware and software block (a computer) electrically connected digitizer (20) via a standard RS-232 connection (see Fig. 6, col. 6, lines 46-53, and col. 8, lines 48-50).

As to claim 12, Maskeny implicitly discloses that dimensions of the modules are relatively small, such that they can be assembled form displays having any 2D shape (see Figs. 1 and 7).

As to claim 13, Maskeny implicitly discloses that the modules of the display are arranged in a standalone manner so that the display apparently has transparent structure (see Fig. 1).

As to claim 18, Maskeny discloses the controller (216) provided with means for managing the pulse width modulation associated with driving pixels (16) of each module (see col. 11, lines 21-55).

14. Claims 1, 11-14, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Holloman (US 4,682,162).

As to claims 1, 11, 14 and 19, the claimed invention reads on the Holloman reference as follows: Holloman discloses a configurable large-area display system (a system as shown in Fig. 6B) comprising a display (a display unit including display boards 10/48/50/52, see Figs. 1a, 2 and 6b) including a plurality of sub-displays or control units (display boards 10/48/50/52) (see Figs. 1a, 2 and 6B), each containing an array of LED pixels (LEDs 14, Fig. 1); a central controller hardware and software block (a microprocessor 54, see Fig. 6B) containing inherent software to control the display system and to generate control data and video signals to be

Art Unit: 2629

displayed on the display (see col. 4, lines 8-39); and an inherent digitizer included in the microprocessor 54, for converting said control data and video signals to a digital signal compatible with the display (see col. 4, lines 15-18); wherein the digitized control data and video signals are passed from one sub-display to the next (see Figs. 2 and 6B) and each sub-display or control unit (10) is capable of controlling the individual pixels (14) of said control unit (10) as a function of position within the display and of the received control data and video signals (see col. 2, line 46 to col. 3, line 40). Holloman further teaches each sub-display or control unit (10) comprising 3 pixel clusters (Fig. 2 shows each pixel cluster comprising 8 LEDs and associating with a control circuit 18) and each cluster including 2 pixel modules which are sequentially interconnected with each other and each containing an array of 4 LEDs (16). Accordingly, all the limitations of these claims are read in the Holloman reference.

As to claim 12, Holloman implicitly discloses that dimensions of the modules are relatively small, such that they can be assembled form displays having any 2D shape (see Figs. 1a and 6B).

As to claim 13, Holloman implicitly discloses that the modules of the display are arranged in a standalone manner so that the display apparently has transparent structure (see Figs. 1a, 2 and 6b).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2629

16. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maskeny and further in view of Fiber Options (2210D RS 232 data single -mode fiber, cited in IDS filed on 05/13/2004).

As to claim 3, Maskeny further discloses the digitizer (20) connected to the display (12s) by connection means as shown in Fig. 4; however, Maskeny does not expressly teach the connection means being means of a fiber link, as presently claimed. However, Fiber Options expressly teaches that the benefit of using a single-mode fiber 2210D in the data transmission system is to make the system extremely versatile and easy to use. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to utilize the fiber in the Maskeny system, in view of the teaching in the Fiber Options, because this would provide a system extremely versatile and easy to use, as taught in the Fiber Options reference.

17. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maskeny and further in view of Toshiba America Information Systems (Summary of RS-232, RS 422, and RS-485 Interface Standards, cited in IDS filed on 05/13/2004), hereinafter Toshiba.

As to claim 4, as discussed in the rejection to claim 1 above, Maskeny discloses all the claimed limitations of this claim except that Maskeny does not disclose expressly that, in the event that the distance between two successive control units (12) exceeds a predetermined distance, an intermediate resyncer is used between said two control units (12) to receive and retransmit the control data and video signals. However, Toshiba expressly teaches that in the event that the distance between multiple drivers and multiple receivers (i.e., two control units) exceeds a predetermined distance, a RS-485 interface (i.e., the claimed intermediate resyncer) is used between multiple drivers and multiple receivers to receive and retransmit the control data

and video signals. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to provide a RS-485 interface in the Maskeny system, in the event that the distance between two successive control units (12) exceeds a predetermined distance, in view of the teaching in the Toshiba reference, because this would provide a system with noise immunity, as taught in the Toshiba reference.. Further, see the Toshiba reference for more benefits of using a RS-485 interface.

18. Claim 5, 7-10, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maskeny.

As to claims 5 and 15, Maskeny further discloses the control unit (12) including a voltage regulator (18) for generating +5V DC voltage to drive the circuits and LEDs (see Fig. 4, col. 4, lines 20-21 and lines 45-51), a resynchronizer unit (a unit including connections and nodes between two control units 12 as shown in Fig. 4) to receive and to transmit data, and a controller (a controller including 4 driver ICs 14, see Fig. 4) driving 4 pixel clusters that each includes 4 modules, each module containing an array of 4 LEDs 16 (see Figs. 1 and 4). Maskeny further teaches that the control unit (12) including means for storing different selected data for future use (see claim 17). Accordingly, Maskeny discloses all the claimed limitations of this claim except that Maskeny uses a voltage regulator and storing means, instead of an AC-to DC power supply and an EEPROM as presently claimed. However, Official Notice is taken that both the concept and the advantages of using an AC-to-DC power supply in a computerized system to avoid the use of charged power supply such as a battery, which limits the computerized system to be operated in a limited period, are well-known and expected in the art. Further, Official Notice is taken that both the concept and the advantages of using an EEPROM in a computerized system

to remain the data even the system powered off are well-known and expected in the art.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to replace a voltage regulator and storing means of Maskeny with an AC-to-DC power supply and an EEPROM, because this would allow a use the system to be operated in a longer period and to avoid the lost of data when the system is turned off.

As to claims 7 and 17, the Maskeny controller (14s) inherently contains algorithms parse the control data and video signals received specific packets associated with the location given module within concerned control unit of display system, in order to drive properly each LED (16) in the display system.

As to claim 8, see the rejection to claim 18 above.

As to claim 9, as discussed in the rejection to claims 1, 11, 14 and 19 above, Maskeny further teaches each sub-display or control unit (12) comprising 4 pixel clusters and each cluster including 4 pixel modules which are sequentially interconnected with each other and each containing an array of 4 LEDs (16). Accordingly, Maskeny discloses all the claimed limitations except that Maskeny cluster contains four modules instead of 32 modules as presently claimed. While Maskeny may not exemplify particular number of modules as presently claimed; however, one of ordinary skill in the art would have been found it obvious to modify the cluster of Maskeny to contain 32 modules in accordance with a particular application. Furthermore, since Applicants have not disclosed the particular number of modules to solve any other problem, to provide other advantage, or to be used for any other purpose, the difference between the number of modules in the Maskeny reference and that of claim 9 is a mere change in the number of modules. Therefore, one of ordinary skill in the art would have found it obvious to modify the

number of modules in the Maskeny cluster as desired as was judicially recognized in re Rose,
105 USPQ 237 (CCPA 1955).

As to claim 10, as discussed in the rejection to claims 1, 11, 14 and 19 above, Maskeny also teaches each module comprising an array of 2x2 pixels (16) (see Fig. 1).

Double Patenting

19. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

20. Claims 14-16 and 19 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3, 5, and 10 of copending Application No. 10/691635, hereinafter APP635. Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: a control unit corresponding to a pixel module of APP635; a configurable large-area display system corresponding to a large-area display of APP635; a pixel cluster corresponding to a cluster of APP635; a power supply; a controller corresponding to a central controller of APP635; EEPROM; pixel elements; and others presently claimed.

Art Unit: 2629

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy H. Nguyen whose telephone number is 571-272-7675. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached at 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JHN
June 16, 2006



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